

**Remarks:**

These remarks are responsive to the Office action dated February 11, 2008. Prior to entry of this response, claims 1-6, 8, and 12-16 were pending in the application. By way of this response, claims 1, 4-5, and 16 are amended, and claim 15 is cancelled. Applicants respectfully request reconsideration of the application and allowance of the pending claims.

**Allowable Subject Matter**

Claim 3 is allowed.

Claims 15 and 16 are indicated to be allowable if rewritten in independent form.

Applicants thank the Examiner for the indication of allowable subject matter and have amended claim 1 to include the limitations of claim 15. Further claims 4-5 have also been similarly amended, and thus Applicants respectfully request that they be allowed.

**Rejections under 35 U.S.C. § 103**

Claims 1, 6, 8, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5,740,675 (Shimasaki) in view of USP 5,929,328 (Seidenfuss) and USP 5,592,815 (Jelden).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5,740,675 (Shimasaki) in view of USP 5,929,328 (Seidenfuss) and USP 5,592,815 (Jelden) and in further view of USP 4,524,264 (Takeuchi et al).

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5,592,815 (Jelden) in view of USP 5,929,328 (Seidenfuss) and USP 5,740,675 (Shimasaki).

**Claims 6 and 12**

The Office action includes a detailed explanation of why the three references should be combined, spanning pages 2-4. Applicants thank the Examiner for this

careful explanation, and Applicants appreciate that additional time spent by the Examiner to fully explain the supporting rationale.

Nevertheless, Applicants respectfully submit that there is at least one fundamental inconsistency in the reasoning.

In particular, the Rejection admits that Shimasaki does not disclose calculating temperature during a plurality of successively de-energized periods, and therefore relies on the notion that it would be obvious to replace the air-fuel sensor configuration of Shimasaki with that of Seidenfuss so that the temperature reading is taken only during the de-energized period of the heater for various reasons, including reducing the complexity and obviating the need for the Shimasaki system to withstand high currents. See page 3 of the Office action.

However, the Office action further admits that the purpose of Shimasaki is that the air-fuel sensor is used to determine whether to enable a catalyst heater, which is needed to rapidly warm the catalyst during cold starts (to reduce emissions). However, this condition is precisely when the heater in the air-fuel sensor needs to be fully on, since it too needs to be heated to an operating temperature so that it can be used for accurate air-fuel ratio control. Thus, having the ability to read the temperature only during de-energized periods would effectively render the proposed combination useless for the intended purpose of the disclosure relied on in Shimasaki. This also explains why Shimasaki needs the more complicated circuitry and the ability to make the temperature readings at high currents during sensor heating, and eliminating these features would not be obvious, but rather destructive to the embodiment of Shimasaki relied on by the Office action.

These arguments apply to claims 6 and 12.

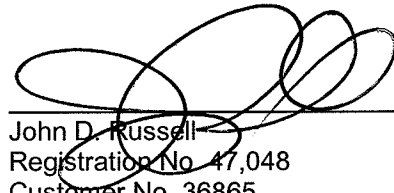
Conclusion

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, Applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Please charge any cost incurred in the filing of this Response, along with any other costs, to Deposit Account No. 06-1510.

Respectfully submitted,

ALLEMAN HALL MCCOY RUSSELL & TUTTLE LLP

A handwritten signature in black ink, consisting of several overlapping loops and a horizontal stroke at the end, positioned above a solid horizontal line.

John D. Russell  
Registration No. 47,048  
Customer No. 36865  
Attorney/Agent for Applicants/Assignee  
806 S.W. Broadway, Suite 600  
Portland, Oregon 97205  
Telephone: (503) 459-4141  
Facsimile: (503) 459-4142